

Jet Engines

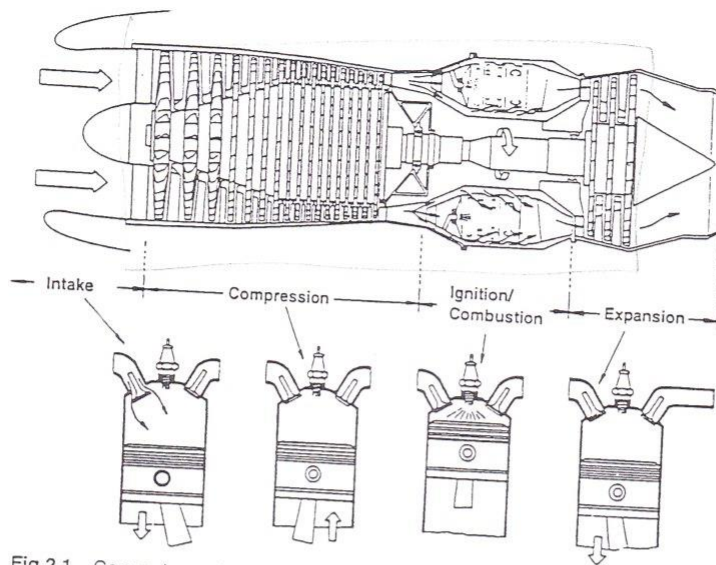


Fig 2.1 Comparison of working cycles for turbojet engine and 4-stroke piston engine

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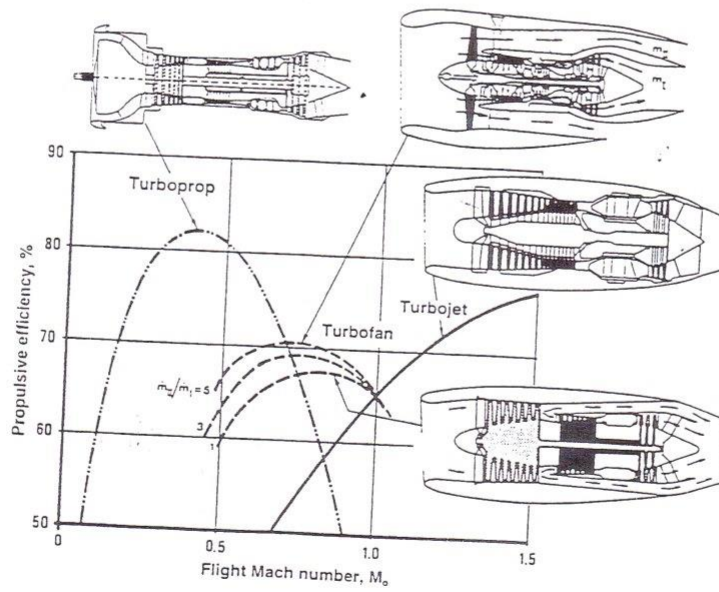
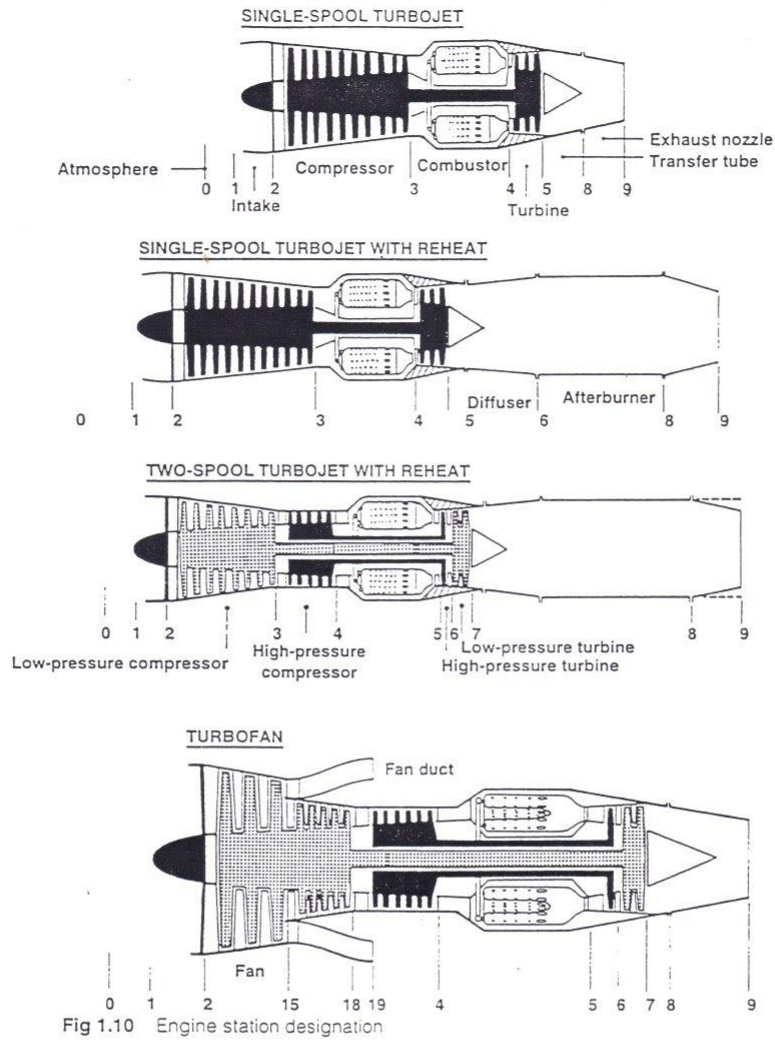


Fig 1.4 Propulsive efficiency characteristics of turboprop, turbofan and turbojet engines

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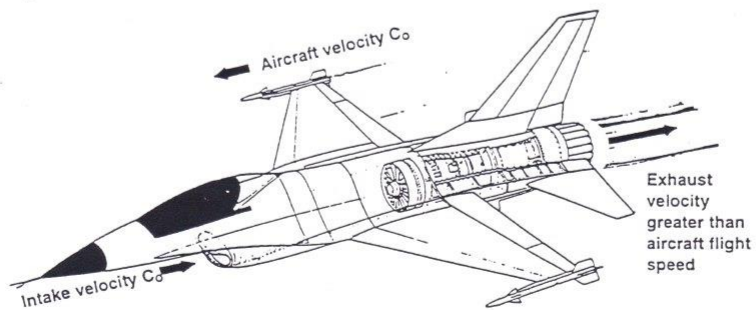
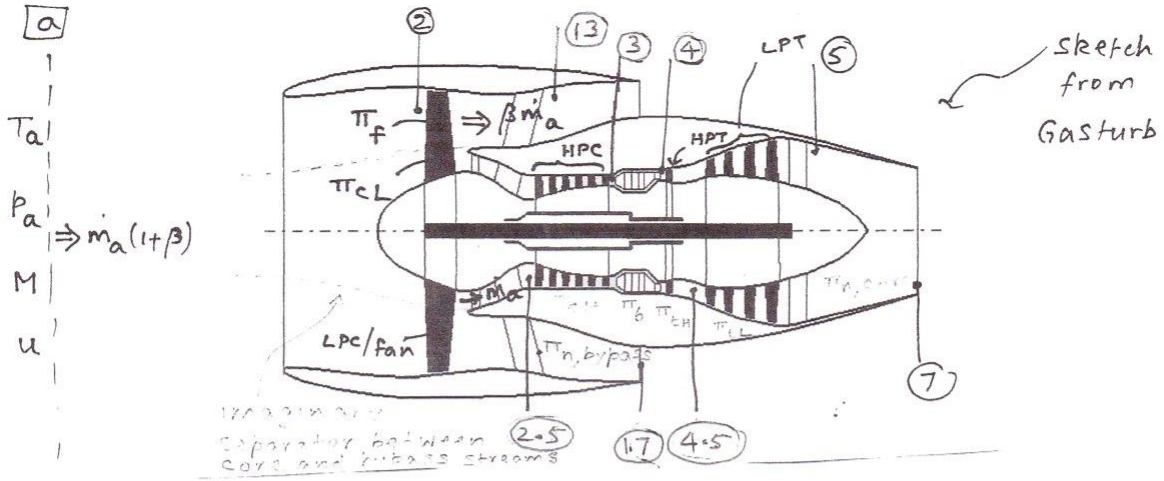
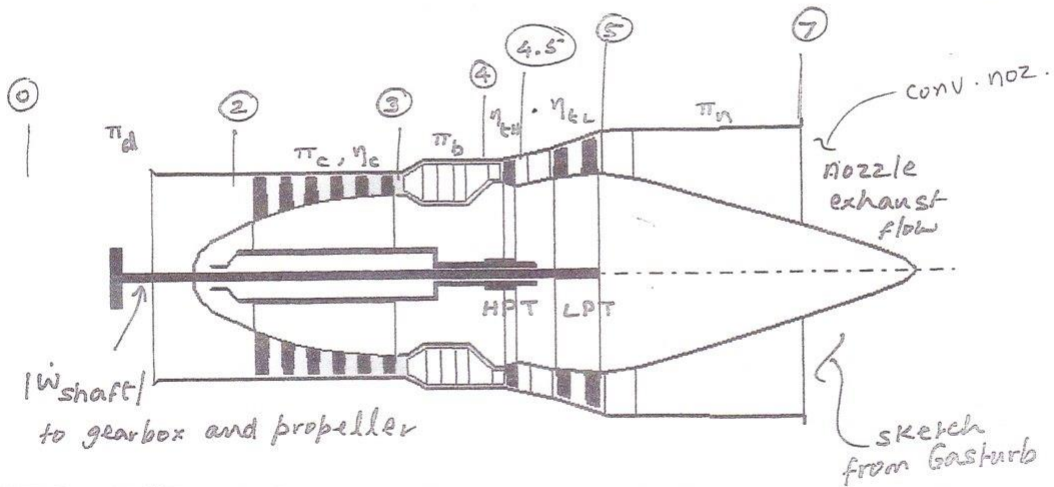


Fig 2.3 Thrust produced by a jet exiting at high velocity from a nozzle

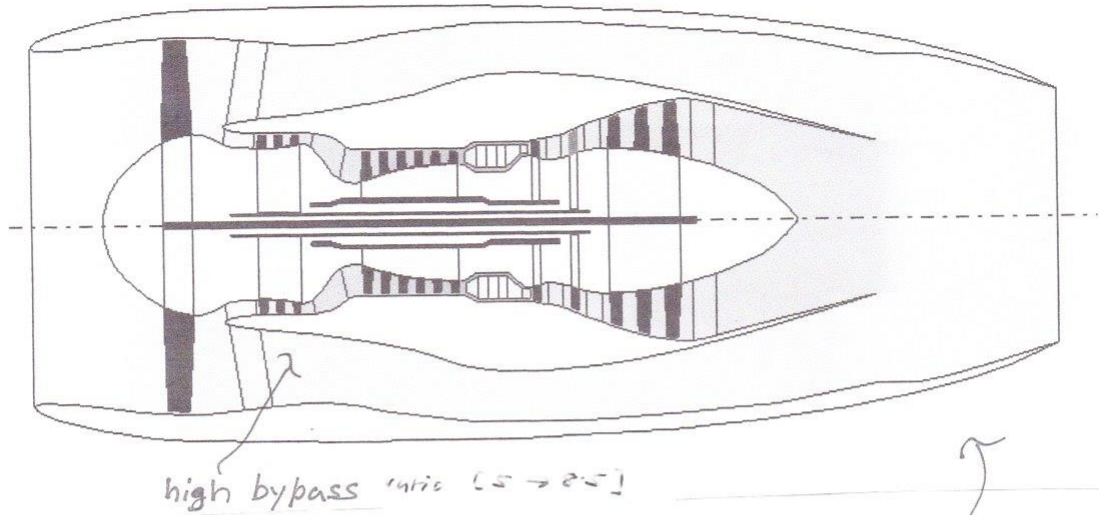
HBTF



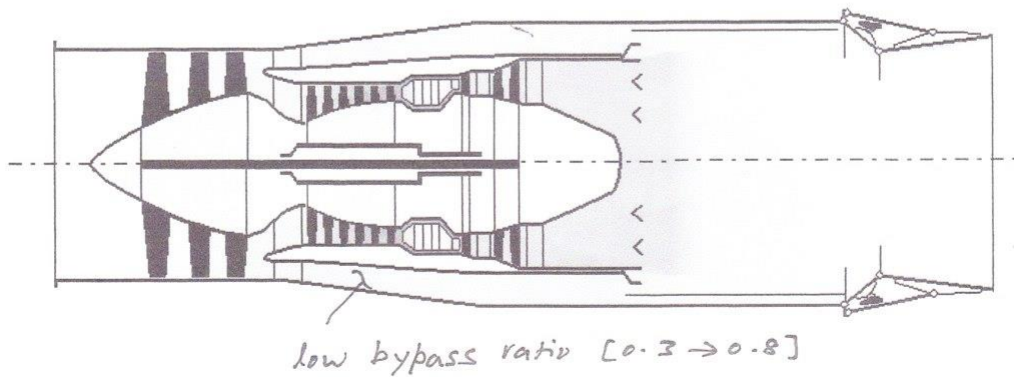
Turboprop



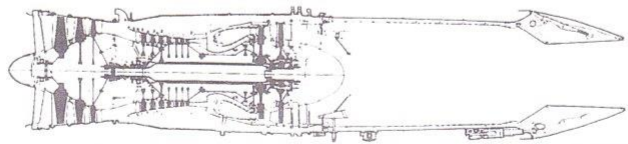
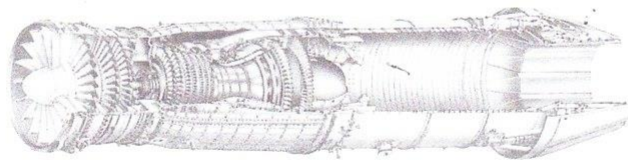
w/o Afterburner, transport application



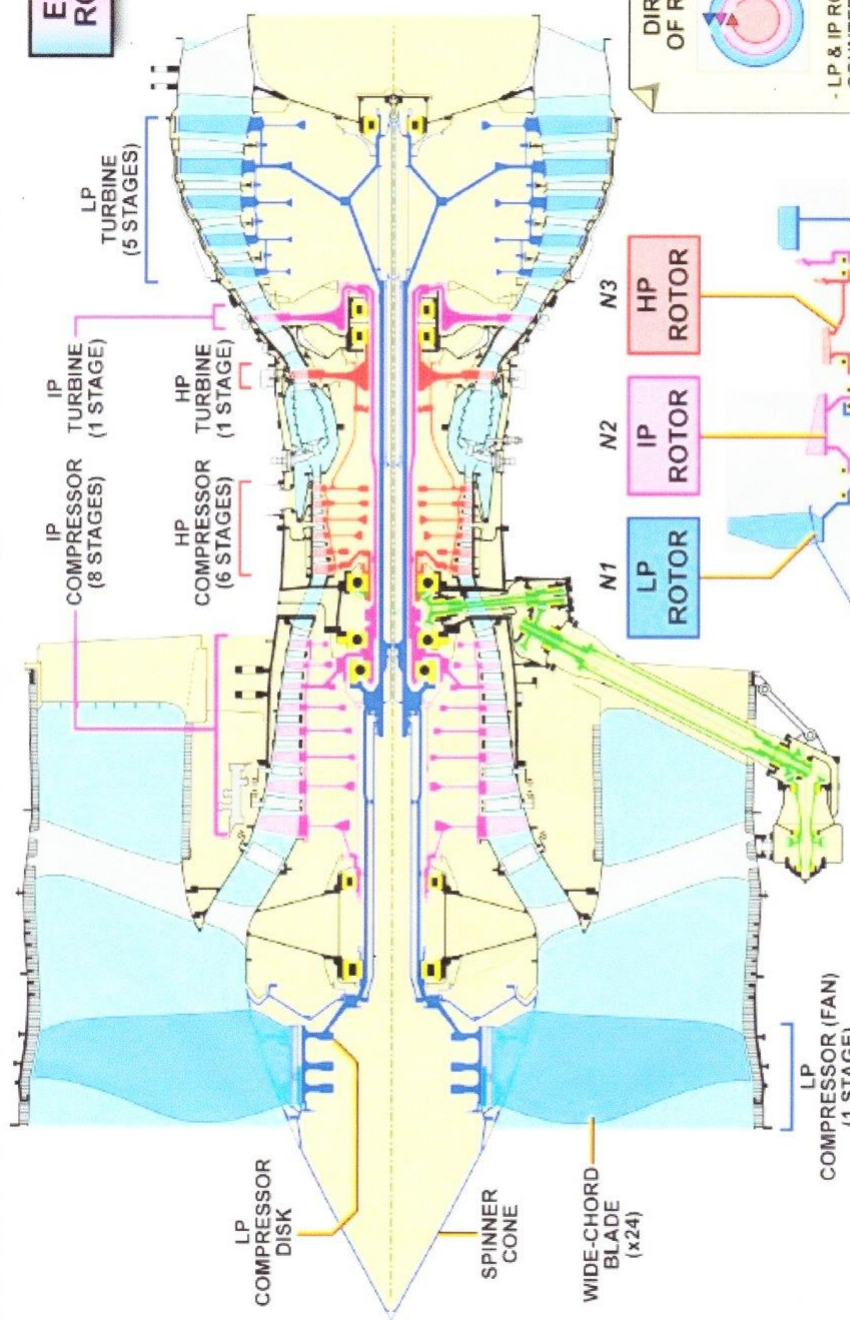
w Afterburner, high-performance application



MIXED STREAM TURBOFAN ENGINE SCHEMATICS



ENGINE ROTORS



DIRECTION OF ROTATION

VIEW FROM REAR

- LP & IP ROTORS : COUNTER CLOCKWISE
- HP ROTOR : CLOCKWISE

ROLLER BEARING (x5)
RADIAL LOADS ONLY

BALL BEARING (x3)
LOCATION BEARING
RADIAL AND AXIAL LOADS
(*) INTERSHAFT BEARING

SPEED OF LP ROTOR : N1
SPEED OF IP ROTOR : N2
SPEED OF HP ROTOR : N3